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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
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EXAMINER

SELLERS, ROBERT E

ART UNIT PAPER NUMBER

1712

DATE MAILED: 07 07 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/077,701

Applicant(s)

HANSON ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-136 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-136 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10, drawn to a mixture of hydroxyarylphosphine oxides, classified in class 252, subclass 609.
- II. Claims 11-19, drawn to a mixture of glycidoxyarylphosphine oxides, classified in class 549, subclass 219.
- III. Claim 20, drawn to an epoxy oligomeric product, classified in class 528, subclass 398.
- IV. Claims 21, 32 and 45, drawn to a flame retardant epoxy composition, classified in class 525, subclass 523.
- V. Claims 22-24, 35-37 and 46-48, drawn to the composition of claim 21, 32 or 45, further comprising a curing agent, and, optionally a filler and a diluent, classified in class 523, subclass 466.
- VI. Claims 25-27, 38-40 and 49-51, drawn to a resin-impregnated composite with the composition of claim 21, 32 or 45, classified in class 428, subclass 297.4.
- VII. Claims 28-31, 41-44, 52-55, drawn to a laminate with the resin-impregnated composite of claim 25 derived from the composition of claim 21, 32 or 45, classified in class 428, subclass 607.
- VIII. Claims 33, drawn to the composition of claim 32 further comprising an epoxy resin, classified in class 525, subclass 525.

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- IX. Claim 34, drawn to the composition of claim 32 wherein at least one component is an oligomer of the mixture of hydroxyarylphosphine oxides with a mixture of glycidyl ethers of hydroxyarylphosphine oxides, classified in class 525, subclass 525.
- X. Claims 56 and 58, drawn to a method of making a mixture of hydroxyarylphosphine oxides wherein the Grignard reagents are reacted simultaneously with phosphorus oxychloride, classified in class 568, subclass 17.
- XI. Claims 57 and 59, drawn to a method of making of hydroxyarylphosphine oxides wherein the Grignard reagents are reacted consecutively with phosphorus oxychloride, classified in class 568, subclass 17.
- XII. Claims 60-66, drawn to a bis(hydroxyphenyl)phosphine oxide of formula (V), classified in class 568, subclass 17.
- XIII. Claims 67-75 and 97-101, drawn to a diglycidyl ether of a bis(hydroxyphenyl)phosphine oxide of formula (VI), classified in class 528, subclass 99.
- XIV. Claims 76-86 and 113, drawn to an epoxy composition derived from a bis(hydroxyphenyl)phosphine oxide of formula (V) and an epoxy resin, classified in class 525, subclass 480.
- XV. Claims 87-89 and 114-116, drawn to a flame retardant epoxy composition of claim 76 further comprising a curing agent, and, optionally a filler and a diluent, classified in class 525, subclass 533.

- XVI. Claims 90-92 and 117-119, drawn to a resin-impregnated composite with the composition of claim 76, classified in class 428, subclass 175.
- XVII. Claims 93-96 and 120-123, drawn to a laminate with the resin-impregnated composite of claim 90 derived from the composition of claim 76, classified in class 428, subclass 416.
- XVIII. Claim 102, drawn to the composition of claim 97 including a reaction product of the bis(hydroxyphenyl)phosphine oxide with a mixture of glycidyl ethers of a mixture of hydroxyarylphosphine oxides, classified in class 525, subclass 485.
- XIX. Claims 103-105, drawn to the flame retardant epoxy composition of claim 97 further comprising a curing agent, and, optionally, a filler and a diluent, classified in class 525, subclass 423.
- XX. Claims 106-108, drawn to a resin-impregnated composite with the composition of claim 103, classified in class 428, subclass 297.4.
- XXI. Claims 109-112, drawn to a laminate with the resin-impregnated composite of claim 106 derived from the composition of claim 103, classified in class 428, subclass 414.
- XXII. Claim 124, drawn to a triglycidyl ether of a tris(hydroxyaryl)phosphine oxide, classified in class 549, subclass 516.

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- XXIII. Claim 125, drawn to a curable composition comprising a tris(o-glycidoxyphenyl)phosphine oxide; optionally, a mixture of hydroxyarylphosphine oxides; and at least one additional epoxy resin, classified in class 525, subclass 525.
- XXIV. Claims 126-128, drawn to the composition of claim 125 further comprising a curing agent, and, optionally, a filler and a diluent, classified in class 523, subclass 427.
- XXV. Claims 129-131, drawn to a resin-impregnated composite with the composition of claim 125, classified in class 428, subclass 175.
- XXVI. Claims 132-135, drawn to a laminate with the resin-impregnated composite of claim 129 derived from the composition of claim 125, classified in class 428, subclass 418.
- XXVII. Claim 136, drawn to a mixture of alkoxyarylphosphine oxides, classified in class 252, subclass 608.

The inventions are distinct, each from the other because:

The mixtures of hydroxy-, glycidoxy- or alkoxy-substituted aryl phosphine oxides of Groups I, II and XXVII are chemically distinct blends of phosphorus compounds having functionally diverse hydroxy, glycidoxy and alkoxy substituents.

The hydroxyarylphosphine oxide mixtures of Group I are useful other than in the preparation of epoxy oligomers, compounds, compositions, resin-impregnated composites and laminates of Groups III-XXVI such as a flame retardant for other polymers such as polyesters, polyamides or polycarbonates.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species of the claimed invention. The patentably distinct species are contingent upon which invention from Groups I-XXVII is elected.

The following are examples of proper elections:

a) If the invention of Group I is elected, a particular mixture of hydroxyarylphosphine oxides should be elected from claims 3-9.

b) If the invention of Group IV is elected:

**1)** component (i) or (ii) from claim 32; and

**2)** a mixture of hydroxyarylphosphine oxides of claim 21 such as those from claims 3-9; and

**3)** an epoxy composition of either an epoxy novolak, a bisphenol A epoxy resin, or a bisphenol F epoxy resin of claim 45 should be elected. Note that the election of (ii) from claim 32 is a distinct species from claims 21 and 45 which are epoxy compositions prepared via component (i).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for each component within the elected invention for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-136 are generic.

A reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.



An oral response to the restriction and election of species is not feasible due to the numerous groups of inventions and complex nature of the election of species. The reply to this requirement to be complete must include an election of the invention and species to be examined even though the requirement be traversed (37 CFR 1.143).

Upon the cancellation of claims to non-elected inventions, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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Robert Sellers  
Primary Examiner  
Art Unit 1712

rs  
7/3/03